CLAIMS

1. Method for engineering traffic between an ingress router and an egress router of a packet network, said traffic being scheduled within said ingress router in queues pertaining to different service classes, said method further including a step of determining a part of the traffic which will follow a dedicated tunnel between said ingress and said egress router

characterized in that

said method includes the provisioning of a tunnel queue dedicated to said part of the traffic intended to flow via said dedicated tunnel, for separately and temporarily storing said part of the traffic towards said dedicated tunnel

said method further includes a step of shaping said part of the traffic towards said dedicated tunnel before entering in said traffic tunnel.

2. Method according to claim 1

characterised in that

said method includes the provisioning of a set of tunnel queues, associated to said dedicated traffic tunnel, each tunnel queue within said set pertaining to a different service class .

3. Method according to claim 2

characterised in that

to each tunnel queue of said set a separate shaper is provided for shaping the traffic from said each tunnel queue of said set.

4. Method according to claim 2 or 3

characterised in that

said set of tunnel queues is associated to a plurality of dedicated traffic tunnels, pertaining to the same egress interface of said ingress router.

5. Method according to claim 1, 2 or 3

characterised in that

said method includes a step of monitoring the traffic via said dedicated tunnel, a step of comparing the result of said monitoring with a reserved bandwidth for said dedicated tunnel, and, depending upon the result of said comparison, a step of informing a network administrator by sending a message to said network administrator.

6. Method according to claim 4

characterised in that

said method includes a step of monitoring the traffic via said plurality of dedicated tunnels at said egress interface, a step of comparing the result of said monitoring with a reserved bandwidth for said plurality of dedicated tunnels, and, depending upon the result of said comparison, a step of informing a network administrator by sending a message to said network administrator.

7. Method according to claims 5 or 6

characterised in that

upon receipt of a message indicating that the traffic through said dedicated tunnel , respectively said plurality of dedicated tunnels, exceeds a predetermined value, said network administrator increases the reserved bandwidth, whereas a new path or paths are calculated for said dedicated tunnel, respectively said plurality of dedicated tunnels, between said ingress router and said egress router.

8. Method according to any of the previous claims
characterised in that
said provisioning of said tunnel queue or of said set of tunnel queues is dependent upon the sending, by said network administrator, of a message enabling said method.

9. Ingress router (I) of a packet network, said ingress router being adapted to route packets within said packet network to an egress router of said packet network via at least one dedicated tunnel (LSP1, LSP2) to said egress router, said ingress router (I) including at least one plurality of queues (AF1,...,Afn, EF, BE, CT) pertaining to different service classes , said ingress router being adapted to temporarily store incoming packets within one of these queues, on the basis of their service class and on the basis of their destination
characterised in that
said ingress router(I) further includes at least one tunnel queue (QLSP1, QLSP2) dedicated and associated to said at least one dedicated tunnel (LSP1, LSP2) ,
said ingress router (I) is further adapted to temporarily store part of the incoming packets within said at least one tunnel queue (QLSP1, QLSP2) within said ingress router,
whereby said ingress router further includes at least one tunnel shaper (SLSP1, SLSP2) associated to said at least one dedicated tunnel (LSP1, LSP2), and adapted to shape the traffic of said at least one dedicated tunnel (LSP1, LSP2).

10. Ingress router (I) according to claim 9
characterised in that

said ingress router further includes at least one set of tunnel queues, pertaining to different service classes, and associated to said at least one dedicated tunnel.

11. Ingress router (I) according to claim 10

characterised in that

said ingress router further includes at least one set of tunnel shapers associated to said at least one dedicated tunnel .

12. Ingress router (I) according to claim 10 or 11

characterised in that

said at least one set of tunnel queues pertaining to different service classes, is associated to a plurality of dedicated tunnels pertaining to the same egress interface of said ingress router.

13. Ingress router (I) according to claims 9, 10, 11 or 12

characterised in that

said ingress router (I) includes a monitoring device (M1) adapted to monitor the traffic of said at least one dedicated tunnel or of said plurality of dedicated tunnels, to compare said traffic with a predetermined threshold related to a reserved bandwidth for said at least one dedicated tunnel or said plurality of dedicated tunnels, and to generate a message to a network administrator depending on the result of said comparison.

14. Ingress router (I) according to any of the previous claims 9 to 13

characterised in that

said ingress router is further adapted to receive a predetermined message from said network administrator related to the enabling of said

at least one tunnel queue or said set of tunnel queues, and to determine therefrom whether or not to enable said at least one tunnel queue for receiving packets intended to said at least one dedicated tunnel.